

178° W., winds as high as force 11 were again encountered. The neighborhood was stormy on several other dates, but no winds exceeding force 9 were reported.

Exceptionally heavy weather occurred off the Oregon and Washington coasts, and thence for several hundred miles seaward, during several days of January from the 1st to the 12th. On the 1st, south to southwest gales of force 9-10 were reported by the steamships *Mexican* and *Stanley Hiller* close in along the coast between 43° and 45° N. The maximum wind velocity at the North Head Weather Bureau Station on that date was 56 miles from the south. On the 3d and 4th the highest velocities reported at North Head were 57 and 56 miles, respectively, and during these days a long stretch of coast line was battered by high winds and seas which caused heavy damage to communication systems and other property. At sea, strong gales to hurricane velocities were experienced within the locality 43°-46° N., 130°-145° W., on the 3d, while on the 4th scattered westerly gales within much the same area were encountered of force up to 10.

Low pressure persisted over the northeastern part of the ocean between the 4th and 11th, but the weather meanwhile appears to have been only moderately stormy, with no gales at sea reported in excess of force 8, and those far from the coast. On the 12th, however, storminess increased locally along the Oregon coast and in the neighboring portions of the sea. The wind became violent during the night of the 11-12th near the mouth of the Columbia River, and the American steamer *Iowa*, caught in the early morning in a heavy gale, was wrecked on Peacock Spit, the so-called graveyard of ships, about 3 miles southwest of North Head Station, where she was lost with her entire crew of 34 men. This is reported as having been the first major marine disaster at that point since 1913. At North Head the maximum wind velocity registered that day was 73 miles from the south. At sea southerly gales of force 10 were reported on the 12th by the American steamers *General Lee* and *Golden Tide*, the first at 7 a. m., in 41°36' N., 134° W., the second at 11 a. m., in 39°31' N., 126°25' W.

Along the middle stretches of the northern steamship routes gales were moderately frequent during the month,

but so far as reported, despite the prevailing low pressures accompanying them, did not exceed 9 in force.

Tropical cyclones.—The subjoined report by the Reverend Bernard F. Doucette, S. J., of the Manila Observatory, indicates that two tropical disturbances, one of minor nature, occurred in the Far East during January 1936.

Tehuantepecers.—Ships traversing the Gulf of Tehuantepec reported northers of force 7 on the 7th and 20th, and of force 11, on the 22d.

Fog.—Fog was reported on 4 days off the Washington and Oregon coasts; on 10 days off the California coast, and on 2 days off the coast of Lower California. Farther at sea the occurrence of fog was rare and scattered.

TYPHOON AND DEPRESSION OVER THE FAR EAST, JANUARY 1936

By BERNARD F. DOUCETTE, S. J.

[Weather Bureau, Manila, P. I.]

Two disturbances, one a typhoon, the other a depression, appeared during the first few days of the month. The depression affected the weather of the Philippines; the typhoon, however, remained at a distance in the Pacific Ocean.

Typhoon, December 31, 1935, to January 3, 1936.—A typhoon formed over the Eastern Caroline Islands, intensifying on the last day of the year near latitude 8.20° N., longitude 150° E. It moved WNW. about 1,150 miles and filled up January 3, 1936, in the regions around latitude 14° N., longitude 136° E.

Depression, December 29, 1935, to January 3, 1936.—Forming about 120 miles S. of Yap, this mild depression moved WNW. toward the Philippines. It passed over Surigao Strait, then across Leyte, Cebu, and Panay Islands on its way to Mindoro Island, where it recurved to the NE. It passed over the Camarines Provinces on its way to the Pacific Ocean, where it filled up, about 120 miles away from the coast. This depression was of little importance with respect to resulting damage, though considerable rain fell over the Visayan Islands and shipping was delayed slightly.

CLIMATOLOGICAL TABLES

DESCRIPTION OF TABLES AND CHARTS

(R. J. Martin)

Table 1 gives the data ordinarily needed for climatological studies for about 180 Weather Bureau stations making simultaneous observations at 8 a. m. and 8 p. m. daily, seventy-fifth meridian time, and for about 20 others making only one observation. The altitudes of the instruments above ground are also given.

Beginning with January 1, 1932, all wind movements and velocities published herein are corrected to true values by applying to the anemometer readings corrections determined by actual tests in wind tunnels and elsewhere.

Table 2 gives, for about 37 stations of the Canadian Meteorological Service, the means of pressure and temperature, total precipitation, depth of snowfall, and the respective departures from normal values except in the case of snowfall. The sea-level pressures have been computed according to the method described by Prof. F. H. Bigelow in the REVIEW of January 1902, 30: 13-16.

Table 3 lists the severe local storms reported in the United States during the month. It is compiled from reports furnished mostly by officials of the Weather Bureau.

CHART I.—*Temperature departures.*—This chart presents the departures of the monthly mean surface temperatures from the monthly normals. The shaded portions of the chart indicate areas of positive departures and unshaded portions indicate areas of negative departures. Generalized lines connect places having approximately equal departures of like sign. This chart of monthly surface temperature departures in the United States was first published in the MONTHLY WEATHER REVIEW for July 1909, but smaller charts appear in W. B. Bulletin U for 1873 to June 1909, inclusive.

CHART II.—*Tracks of centers of ANTICYCLONES;* and

CHART III.—*Tracks of centers of CYCLONES.* The roman numerals show the chronological order of the centers. The figures within the circles show the days of the month, the location indicated being that at 8 a. m., seventy-fifth meridian time. Within each circle is also an entry of the last three figures of the highest barometric reading (chart II), or (chart III) the lowest reading reported at or near the center at that time, in both cases as reduced to sea level and standard gravity. The intermediate 8 p. m. locations are indicated by dots. The inset map on chart II shows the departure of monthly mean pressure from normal and the inset on chart III